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REMARKS

Claims 1, 6, and 11 have been amended to specify that the claimed retinoid boosters is a specific list that has been demonstrated to de-stabilize retinoid to a greater extent than the retinoids would be unstable in the absence of the boosters. Support for this amendment may be found in the table on page 37 of the Specification.

Claims 1, 6 and 11 (the independent claims) have been further amended to clarify that the dual compartment package as claimed is intended to avoid chemical degradation of the retinoid composition that would be caused by contact with the booster composition. Support for this amendment may be found in the Specification, pp. 36-37.

Care has been taken not to introduce any new matter.

The Present Invention

The present invention is directed to a new and unobvious combination of specified retinoids and specified retinoid boosters. The specified retinoid boosters, despite boosting the effect of specified retinoids on the skin, tend to destabilize the specified retinoids in the composition. Therefore, with respect to the specified retinoid boosters, there is a greater stability problem, as shown in the table on page 37 of the Specification.

The retinoid/retinoid booster combinations are maintained in separate compartments of a package and the retinoid composition is kept out of contact with oxygen to promote its stability against chemical degradation and to avoid further instability that would be caused by contact with retinoid boosters.

Claim Rejections - 35 USC § 112

The Specification Provides Enablement for "Retinoid Boosters" As Generally Defined in the Specification, and As Specifically Claimed

Claims 1-15 were rejected under 35 U.S.C. 112, first paragraph, because the specification, according to the Office Action,while enabling for the particular compounds listed in tables B1-B5 of the specification, does not reasonably provide enablement for "retinoid boosters" in general.

Applicants traverse this rejection and respectfully submit that the Specification is enabling for all the retinoid boosters claimed. Retinoid boosters are defined in the Specification as compounds that inhibit or enhance the activity of certain enzymes which drive the equilibrium of the retinoid metabolism reaction shown in **Chart 1** on page 6. It is believed that retinoids are enzymatically converted in the skin into Retinoic Acid according to the mechanism described in **Chart 1**. Retinoic Acid is the form of retinoid in the mechanism that Applicants strive to achieve. On the other hand, the equilibrium of the mechanism tends toward retinyl ester as the most stable form of retinoid. Therefore, Applicants have introduced compounds that

would tend to drive the equilibrium of the mechanism toward the Retinoic Acid form. Accordingly, Retinoid Boosters are further **defined** as compounds that alone, or in combination with each other, potentiate the action of a retinoid by increasing the amount of Retinol available for conversion to Retinoic Acid and inhibiting the degradation of Retinoic Acid.

For example, B1 compounds are those that inhibit the ARAT/LRAT enzymes, so that the equilibrium would shift in the direction of retinoic acid; B2 compounds are those that boost the activity of the Retinol dehydrogenase enzyme; B3 booster compounds are those that inhibit the activity of the Retinal reductase enzyme; etc. See also Specification, page 7, lines 1-14. Applicants have introduced in great detail the assays used to determine the activity of such retinoid booster compounds.

In the interest of progressing this patent application to issue, Applicants have amended the independent claims 1, 6 and 11 to recite specific retinoid boosters. The claimed boosters are those that tend to destabilize (cause chemical degradation) the claimed retinoids, as shown in the table on page 37 of the Specification. Clearly, one skilled in the art would be able to make the invention commensurate in scope with the amended claims, as the specification teaches compositions with the specified retinoid boosters. These narrowing claim amendments significantly reduce the quantity of experimentation necessary for one skilled in the art. As the amendment of independent claims 1, 6, and 11 renders moot this rejection under under 35

U.S.C. 112, first paragraph, it does the same for the dependent claims 2-5, 7-10 and 12-15.

The Claims As Amended Particularly Point Out and Distinctly Claim the Subject Matter Which Applicants Regard as Their Invention

Claims 1-15 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicants respecfully traverse this rejection. As stated above, the term "retinoid boosters" is sufficiently defined in the Specification, making it clear which retinoid compounds are being boosted by way of boosting or inhibiting the enzymes that promote given reactions in the retinoid metabolizm, as shown in **Chart 1**. Furthermore, independent claims 1, 6, and 11, as amended, recite specific retinoid boosters, so that the claimed list of boosters is clearly not indefinite. For example, it is clear that the claimed retinoid boosters do not include a retinoid compound. The activities of retinoid compounds are being boosted by the boosters, resulting in a greater delivery of retinoic acid to the skin, which is the most active form, as discussed in the Specification. As the amendment of independent claims 1, 6, and 11 renders moot this rejection under under 35 U.S.C. 112, second paragraph, it does the same for the dependent claims 2-5, 7-10 and 12-15.

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Claims 5, 10 and 15 were rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. According to the Office Action, the expression "mimicking the effect on skin of retinoic acid" is vague and indefinite.

Claims 5, 10, and 15 are method claims dependent on amended independent claims 1, 6, and 11, respectively. As discussed in the previous response, Claims 1, 6, and 11 had been amended to recite specific retinoids, excluding retinoic acid. Applicants respectfully submit that the claims are now clear to the effect that a combination of a claimed retinoid (excluding retinoid acid) and booster mimick the effects of retinoic acid. The effects of retinoic acid are described in detail throughout the Specification. The unexpected result of the present invention is that compositions that do not contain retinoic acid behave (i.e. mimick) as if they did contain the most active form of retinoid, i.e., retinoic acid.

According to the Office Action, the term "stable" in claim 1-3, 6-8 and 11-13 is a relative term which renders the claims indefinite; the specification does not provide a standard for ascertaining the requisite degree, etc.

Claims 1, 6 and 11 (the independent claims) has been amended to clarify that the dual compartment package as claimed is intended to avoid chemical degradation of the retinoid composition that would be caused by contact with the booster composition. Support for this amendment may be

found in the Specification, pp. 36-37. Therefore, Applicants respectfully submit that the term "stable" has been properly defined in the claims and the specification. See, for instance, the Example on pp. 36-37, which discusses the reduced stability of retinol against degradation in the presence of the claimed boosters. In another instance, the Specification defines that retinoids, as well as combinations of retinoids and boosters, are generally unstable and may undergo chemical degradation, i.e., chemical instability. See page 30, lines 11-14. Applicants respectfully submit that this rejection has been rendered moot by the clarifying claim amendments, which also applies to the dependent claims 2-5, 7-10 and 12-15.

Claim Rejections - 35 USC § 103

Claims 1-15 were rejected under 35 U.S.C. 103(a) as being unpatentable over Suares et al. (USPN 5,914,116) in view of Liu et al. (USPN 5,976,555) and Remington.

According to the Office Action, Suares et al. (USPN 5,914,116) teaches a method for a skin treatment comprising a topical application regime and a respective product; The product includes a first composition containing at least one active (0.10% Vitamin A palmitate),and a second composition including a second active (0.30% fragrance, and 3.00% stearic acid); The first and second compositions are stored in respective separate containers which are joined together, see col. 7 and 8, Example 1, col. 11, lines 32-36, and abstract in particular; etc.

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The Office Action admits that Suares et al. (USPN 5,914,116) does not teach that the first and/or second compartments keep the respective compositions out of contact with oxygen, neither does it teach that the two compartments are made of aluminum. However, Liu et al. is cited to supposedly remedy the deficiency for its teaching that retinal and retinyl esters quickly lose their activity and oxidize or isomerize. According to the Office Action, Remington in a subsection entitled "pharmaceutical containers" in the chapter on stability of pharmaceutical products teaches that aluminum containers are widely used in the pharmaceutical products.

Applicants traverse this rejection and would like to point out that the independent claims 1, 6 and 11, as amended, relate to specific booster compounds that are shown to de-stabilize the claimed retinoids to a greater extent than the degree of instability in the absence of the boosters. See the table on page 37 of the Specification. For example, the results in the Table show that alpha-ionone increases the rate of retinol loss by a factor of 1.3. Similarly, it can be seen that all the claimed boosters significantly increase the rate of retinol loss. Therefore, the presence of the boosters necessitates separate compartments for the two compositions, more so than the cited art.

Applicants respectfully submit that Liu et al. do not remedy the deficiency of Suares et al. Firstly, Liu et al. merely restate the problem. Liu et al. merely state an invitation to invent by restating that retinoids are

unstable. Liu et al. do not address the problem to which the present invention is addressed, i.e., alleviating the additional instability contributed by boosters. (At most, Liu et al. provide a different solution – i.e. formulating in an emulsion with a specifically defined stabilizer system, but all in one composition.) Secondly, the combination of Suares et al. and Liu et al. does not arrive at the subject matter of the present invention as claimed in Claims 1, 6 and 11, as amended, (note, Remingtons's disclosure of aluminum is not relevant to patentability of the independent claims) because Liu et al. use a chemical stabilization system rather than a separate compartment system. Although Liu et al. describe the use of a container for storing the composition so that it is out of contact with oxygen, the container is described for use for the retinoid composition with an emulsifier system and a co-emulsifier alone and does not protect the retinoid from degradation due to contact with retinoid boosters.

Accordingly, Liu et al. does not remedy the deficiencies of Suares et al. If fact, none of the references cited in the Office Action teach or suggest the need for stabilizing retinoid compositions in the presence of retinoid enhancing actives. Therefore, although dual purpose single formulation cosmetic products have been developed in the cited art, only in hindsight, with the benefit of the disclosure of the present invention, is the need for stable cosmetic compositions that attenuate the existing problems of retinoid stability in the presence of boosters met.

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Even if there were motivation to combine Remington with Suares et al. and Liu et al., the art combination with Remington only potentially relates to the dependent claims 3, 8 and 13 of the present invention, i.e., those specifying that the preferred oxygen impermeable material is aluminum. However, there is not motivation to combine Reminton with Suares et al. and Liu et al. because Remington deals with high temperature storage. High temperature storage is not relevant to the present invention. Again, even if combined, Applicants respectfully submit that, since the independent claims are in condition for allowance, those claims that depend from them are also in condition for allowance.

Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "**Version With Markings To Show Changes Made**."

In view of the foregoing amendments and comments, applicants request the Examiner to reconsider the rejection and now allow the claims.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the claims:

Claims 1, 6 and 11 have been amended as follows.

1. (Twice Amended) A stable skin care product comprising:

a first composition comprising about 0.001% to about 10% of a retinoid selected from the group consisting of retinyl esters, retinol, retinal, and mixtures thereof;

a second composition comprising about 0.0001% to about 50% of at least one retinoid booster selected from the group consisting of CITRAL, CITRONELLOL, COCAMIDE DEA, DAMASCONE, 1,3 DIMETHYL 2 IMIDAZOLIDINONE, GERANIOL, 18b GLYCERHETINIC ACID, 8 OH QUINOLINE, N LAURY SARCOSINE, LINALOOL, LINOLEAMIDE DEA, ALPHA IONONE and LINSEED OIL;

a first compartment for storing the first composition, wherein the first compartment keeps the first composition out of contact with oxygen; and

a second compartment for storing the second composition, the first and second compartments being joined together;

thereby avoiding chemical degradation of said first composition that would be caused by contact with said second composition.

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6. (Twice Amended) A stable skin care product comprising:

a first composition comprising about 0.01% to about 1% of a retinoid to provide a first benefit; said retinoid selected from a group consisting of retinyl esters, retinol, retinal, and mixtures thereof;

a second composition comprising about 0.0001% to about 50% of at least one retinoid booster to boost the first benefit;
said retinoid booster selected from the group consisting of CITRAL, CITRONELLOL, COCAMIDE DEA, DAMASCONE, 1,3 DIMETHYL 2 IMIDAZOLIDINONE, GERANIOL, 18b GLYCERHETINIC ACID, 8 OH QUINOLINE, N LAURY SARCOSINE, LINALOOL, LINOLEAMIDE DEA, ALPHA IONONE and LINSEED OIL;

a first compartment for storing the first composition, wherein the first compartment keeps the first composition out of contact with oxygen; and

a second compartment for storing the second composition, the first and second compartments being joined together;

thereby avoiding chemical degradation of said first composition that would be caused by contact with said second composition.

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11. (Twice Amended) A stable skin care product comprising:

a first composition comprising about 0.001% to about 10% of a retinoid to provide a first benefit; said retinoid selected from a group consisting of retinyl esters, retinol, retinal, and mixtures thereof;

a second composition comprising about 0.0001% to about 50% of at least one retinoid booster to boost the first benefit;
said retinoid booster selected from the group consisting of CITRAL, CITRONELLOL, COCAMIDE DEA, DAMASCONE, 1,3 DIMETHYL 2 IMIDAZOLIDINONE, GERANIOL, 18b GLYCERHETINIC ACID, 8 OH QUINOLINE, N LAURY SARCOSINE, LINALOOL, LINOLEAMIDE DEA, ALPHA IONONE and LINSEED OIL;

a first compartment for storing the first composition, wherein the first compartment keeps the first composition out of contact with oxygen; and

a second compartment for storing the second composition, wherein the second compartment keeps the second composition out of contact with oxygen; and wherein the first and second compartments are joined together;

thereby avoiding chemical degradation of said first composition that would be caused by contact with said second composition.

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